Amendments to the Specification

Please replace paragraph [0074], with the following amended paragraph:

[0074] The approach track circuit 602 generates feedback 612 indicative of the voltage transmitted along the rail 102, and a feedback 678 indicative of the transmitted current. Differential amplifiers can be used to provide the transmitted voltage feedback 612 and the transmitted current feedback 678. For example, a differential input amplifier 607 is connected to lead 112A and lead 112B, and the output provides feedback voltage 612 representing the voltage of the transmitted approach signal. A resistor 609 is interposed in series with output lead 112B, and a differential input amplifier 611 has its inputs connected to the respective ends of resistor 609 in order to provide a[[n]] feedback current signal 678 representative of the value of the constant current applied to the track. A received voltage feedback 614 represents the transmitted approach signal voltage picked up by the receiver via leads 116A and 116B. In one embodiment, the receiver 615 is another differential input amplifier having its inputs connected to the tie points 116A and 116B, and the output signal from amplifier is a voltage representative of the received approach signal. Feedbacks 612, 678 and 614 are provided to the data acquisition system 617 comprised of a track circuit feedback 616, anti-alias filter 618, and multiplexer 620. As known to those skilled in the art, multiplexing involves sending multiple signals or streams of information at the same time in the form of a single, complex signal (i.e. multiplex signal). In this case, the anti-alias filter 618 receives the transmitted voltage feedback 612, the transmitted current feedback 678, and the received voltage feedback 614 to eliminate, for example, noise in the received feedback signals. The multiplexer 620 is coupled to the anti-alias filter and multiplexes the filtered first transmitted voltage feedback 612, the filtered first transmitted current feedback 678, and the filtered first received voltage feedback 614 to generate a multiplexed analog signal 622. The multiplexed analog signal 622 is provided to an analog to digital converter 662 where the analog signal is sampled and digitized and converted into first digital signals that correspond to the transmitted voltage feedback 612, the transmitted current feedback 678, and the received voltage feedback 614. The first digital signals are digitally bandpass filtered within the DSP 604 and the filtered data is processed to determine signal level and phase. In particular, the first digital signals are processed to determine the frequency and

magnitude of the transmitted voltage feedback 612, the transmitted current feedback 678, and the received voltage feedback 614. Processing the ~~second~~ **first** digital signals also includes digitally filtering the second digital signals to determine if the frequency of the received voltage feedback 614 is within a first passband range. If the received voltage feedback 614 is determined to be within a first passband range, the DSP 604 uses the determined signal level (i.e., magnitude) and phase data to calculate the overall track impedance, which in turn determines the presence and motion of a train within the approach track circuit 128. In an alternate embodiment, the DSP 604 provides the data that includes the signal level and signal phase to a different processor (not shown) that calculates the overall track impedance, which in turn determines the presence and motion of a train within the approach track circuit 128.